

REMARKS

Reconsideration is respectfully requested of the above-identified application and the Office Action dated September 1, 2000.

On the copy of the previously submitted PTO-1449 reference disclosure form, the Examiner indicated that Applicant did not provide copies of foreign patent documents SU 299472 A, RU 2018491, RU 2039019, and RU 2039715. Enclosed herewith, is a new Information Disclosure Form, including a copy of each of these patents. If required for consideration of these references, authorization is given to charge Deposit Account No. 02-4300 the amount required in 37 CFR §1.17(p) of \$180.

Also on the copy of the previously submitted PTO-1449 reference disclosure form, the Examiner indicated that Applicant did not provide the date and pertinent pages of the International Search Report and the International Preliminary Examination Report. Accordingly, Applicant has provided this information on the new Information Disclosure Form.

In response to the comments as to which claims were being considered as withdrawn and for indication that it was not seen, new claims 19 and 20 could be treated as linking claims. Claim 19 is considered a linking claim on the basis that it sets forth means for performing each of the mentioned steps in claim 1. Reference is also made to the following MPEP excerpts.

806.05(e)

If the apparatus claims include a claim to "means" for practicing the process, this claim is a linking claim (except for the presence of this claim restriction between apparatus and process claims would be proper). The linking claim must be examined with the elected invention, but only to the extent necessary to determine if the linking claim is unpatentable. If the linking claim is unpatentable, restriction is proper.

It should be noted that a claim such as, "An apparatus for the practice of the process of claim 1, comprising...." and then the claim continues with purely apparatus limitations, is not a linking claim. this is merely a preamble similar to a statement of intended use and should be treated as any preamble.

The most common types of linking claims which, if allowed, act to prevent restriction between inventions that can otherwise be shown to be divisible, are . . .

809.03

(C) a claim to "means" for practicing a process linking proper apparatus and process claims; . . .

The preamble of claim 19 has been amended herein to even further clarify its relationship with claim 1.

The Examiner objects to the specification, citing informalities. Applicant has amended the specification, where appropriate, giving full consideration to the Examiner's remarks. These amendments are believed to overcome the Examiner's objections.

Claims 1-7 are rejected under 35 U.S.C. §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter

which Applicant regards as the invention. Specifically, the Examiner asserts that claim 1 is indefinite because it "requires further stabilizing after the initial stabilizing."

Applicant respectfully submits that stabilizing the glass mass in the stabilizing section and further stabilizing the glass mass in the feeder are two different stabilizing processes yielding two different results. For instance, in the stabilizing section 6, gas bubbles and foam are expelled and the glass mass surface becomes smooth and even (*see* page 6, lines 7-8). As such, this stabilization step results in the stabilization of the volume of the melted glass mass (*see* page 5, lines 12-14). In the feeder 8, the melt becomes stable by way of averaging the mass and ensuring the relation of the constituents (*see* page 5, lines 15-17). Therefore, after the initial stabilizing in volume, the melt is still unstable in average mass and the relation of the constituents, and accordingly, it requires further stabilizing. However, Applicant has amended claim 1 to more clearly recite the two steps, and it is believed that the §112 rejection is overcome by this amendment. The specification has also been amended to replace "till" with -- by way of -- which is considered more grammatically correct and not introduce any new matter (see the stabilization discussion in lines 11-19 on page 5 of the present application). Also, ">" has been changed to -- \geq -- to conform to the translation of the incorporated by reference parent PCT case.

Claims 1-7 are rejected under 35 U.S.C. §103(a) as being unpatentable over Austin, et al. ("Austin") in view of Shofner, et al. ("Shofner") and Naber, et al.

("Naber"). Applicant respectfully submits that claims 1-7 are not rendered obvious by these references.

The Examiner concedes that Austin does not teach the two-stage stabilizing process as claimed, but asserts that this two-stage process is taught by Shofner. As described above, the claimed method includes two-staged stabilizing. In the rejection it is indicated that the Shofner apparatus has a furnace and a forehearth, and that it is deemed that the melting in furnace is the first stabilizing, because it would have unmelted particles, and in the forehearth the glass would still be homogenizing, i.e., stabilizing.

The claimed method, however, is characterized with different stabilizing processing. Under the claimed present invention, in the stabilizing section of the melting furnace the melt becomes stable in volume because gas bubbles and foam are expelled. Volume stabilization is indicative of all unmelted particles having been already melted in the main volume of the surface and the stabilizing section is intended for expelling of bubbles and foam.

In addition, under the present invention the melt is kept in the stabilizing section of the melting furnace until it reaches the fibre manufacture temperature. Also, in the claimed method, stabilizing in the feeder is for stabilizing constituents of the glass mass received in the feeder for achieving an averaging of mass and obtaining the needed relation of constituents.

Such two-staged stabilization permits to shorten the time of stabilizing of the melt in the feeder which permits to lessen the possibility of glass mass crystallization in the spinnerets, which is not obvious from the cited prior art.

Accordingly, in view of the above amendments and Remarks, Applicant respectfully submits that all of the claims are allowable, and that this application is therefore in condition for allowance. Favorable action is courteously requested at the Examiner's earliest convenience.

Respectfully submitted,

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December 1, 2000


146913

Table 1



Composition number	Composition of rock base									
	Na	Mg	Al	Si	K	Ca	Ti	Mn	Fe	P
1.	4.567	0.232	11.537	32.932	2.426	1.428	12.771	0.240	33.968	-
2.	0.415	13.552	1.153	51.318	0.184	21.752	1.320	0.309	9.999	-
3.	6.573	0.358	20.340	60.648	4.873	2.088	1.506	0.001	2.689	0.326
4.	3.513	4.067	11.235	44.778	2.670	7.883	5.325	0.474	19.651	0.454
5.	5.744	0.465	19.541	56.221	4.503	3.924	2.889	0.189	5.642	0.890

Table 2



Composition number	Composition of large inclusions									
	Na	Mg	Al	Si	K	Ca	Ti	Mn	Fe	P
1.	5.420	0.352	26.824	54.104	0.461	10.875	0.330	0.061	1.552	0.00
2.	6.672	0.000	20.207	64.108	6.410	1.540	0.300	0.024	0.489	0.248
3.	1.425	13.499	2.304	50.003	0.166	19.882	1.917	0.216	10.279	0.871
4.	0.984	0.685	24.053	56.550	4.568	8.310	2.847	0.031	1.992	0.00
5.	4.160	1.859	17.890	58.470	4.688	5.817	0.497	0.245	6.378	0.00

Table 3

Composition number	Composition of small inclusions									
	Na	Mg	Al	Si	K	Ca	Ti	Mn	Fe	P
1.	5.775	0.413	18.112	63.813	8.139	1.459	0.132	0.000	2.156	0.000
2.	11.614	2.263	22.164	55.601	0.260	2.243	0.159	0.098	3.819	1.776
3.	0.422	1.364	0.817	0.830	0.086	0.214	23.541	1.226	71.502	0.000
4.	0.371	2.138	1.035	0.627	0.095	0.060	20.530	0.796	72.217	0.134
5.	0.727	12.683	1.364	49.475	0.187	20.085	2.023	0.250	13.121	0.087

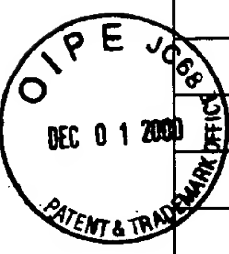

Table 4

Composition number	Average composition of starting basalt									
	Na	Mg	Al	Si	K	Ca	Ti	Mn	Fe	P
1.	6.325	1.970	17.833	55.903	4.553	4.672	1.532	0.160	6.977	0.000
2.	5.058	7.932	14.127	46.164	2.320	4.697	1.343	0.396	16.461	1.512
3.	5.877	2.773	17.493	53.716	8.923	4.867	1.299	0.098	8.276	1.680
4.	4.587	3.187	17.660	52.501	3.927	5.515	1.701	0.155	8.541	1.953
5.	4.404	3.470	16.824	51.606	2.810	7.681	1.852	0.185	9.223	2.944

Table 5

Composition number	Glass mass composition for fibre pulling												
	Na	Mg	Al	Si	K	Ca	Ti	Mn	Fe	P	Al ₂ O ₃ + SiO ₂	FeO	2Al ₂ O ₃ + SiO ₂
											CaO + MgO	Fe ₂ O ₃	2Fe ₂ O ₃ + FeO + CaO + MgO + K ₂ O + Na ₂ O
1.	2.00	10.58	11.82	50.42	0.52	8.84	1.04	8.18	12.25	0.21	3.2	3.34	2.0
2.	2.34	5.47	12.58	49.03	0.66	9.53	2.85	0.32	14.03	0.30	4.11	2.62	2.06
3.	3.88	4.65	16.75	50.61	1.0	9.07	1.81	0.18	10.26	0.40	4.9	0.54	2.37
4.	2.93	5.99	14.89	50.15	0.34	3.82	2.04	0.22	12.05	1.98	4.38	1.52	2.37
5.	4.75	3.54	15.33	49.66	3.10	6.56	2.84	0.21	12.05	1.98	6.44	1.62	2.39

Table 6

Composition number	Point of crystallization upon limit	Fibre diameter	Heat range of fibre manufacture	Viscosity range at T_{fmhr}
	T_{culp} °C	mcm	T_{fmhr} °C	Pa C
1.	1290	8,4 - 12	1360 - 1400	104 - 62
2.	1275	7,0 - 13	1380 - 1440	112 - 64
3.	1240	7,0 - 11	1370 - 1450	188 - 64
4.	1250	7,0 - 12	1350 - 1440	235 - 96
5.	1245	7,0 - 12	1350 - 1430	235 - 104

Table 7

Compo- sition number	Strength and chemical resistance of fibre					
	Fibre diametre	Tensile strength	Chemical resistance in % after three-hour boiling			
	mcm	Mpa	H ₂ O	NaOH		HCl
				0.5H	2H	2H
1.	10.2	2400	99.3	92.6	85.3	75.9
2.	10.0	3110	99.4	97.5	94.0	80.6
3.	9.0	2240	99.5	98.2	95.2	91.0
4.	9.5	3050	99.4	97.6	96.8	90.1
5.	9.5	3100	99.4	94.1	92.5	83.5

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IN EVERY COLUMN OF NUMBERS,
REPLACE EVERY COMMA WITH A DECIMAL POINT



Table 5

Compo- sition num- ber	Glass mass composition for fibre pulling												
	Na	Mg	Al	Si	K	Ca	Ti	Mn	Fe	P	Al ₂ O ₃ + SiO ₂ CaO+ MgO	FeO Fe ₂ O ₃	2Al ₂ O ₃ + SiO ₂ 2Fe ₂ O ₃ + + FeO + + CaO + + MgO + + K ₂ O + + Na ₂ O
1.	2,00	10,58	11,82	50,42	0,52	8,84	1,04	8,18	12,25	0,21	3,2	3,34	2,0
2.	2,34	5,47	12,58	49,03	0,66	9,53	2,85	0,32	14,03	0,30	4,11	2,62	2,06
3.	3,88	4,65	16,75	50,61	1,0	9,07	1,81	0,18	10,26	0,40	4,9	0,54	2,37
4.	2,93	5,99	14,89	50,15	0,34	3,82	2,04	0,22	12,05	1,98	4,38	1,52	2,37
5.	4,75	3,54	15,33	49,66	3,10	6,56	2,84	0,21	12,05	1,98	6,44	1,62	2,39

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	Fibre diameter	Tensile strength	Chemical resistance in % after three-hour boiling			
	mcm	MPa	H ₂ O	NaOH		HCl
				0,5H	2H	2H
1.	10,2	2400	99,3	92,6	85,3	75,9
2.	10,0	3110	99,4	97,5	94,0	80,6
3.	9,0	2240	99,5	98,2	95,2	91,0
4.	9,5	3050	99,4	97,6	96,8	90,1
5.	9,5	3100	99,4	94,1	92,5	83,5

IN EVERY COLUMN OF NUMBERS,
REPLACE EVERY COMMA WITH A DECIMAL POINT =